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Levels of stress between cooperative education students on-placement and pending placement

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Abstract

The purpose of this study was to see if there was an association between the levels of stress in students who were interviewed for a job and their placement status after the job interview. During the spring 2000 semester, 62 students were sent on interviews with public and private agencies/companies for potential placement in cooperative education positions within the agencies/companies. Out of this total population of 62 interviewed, twenty-three were placed in positions (hereafter referred to as "on-placement") and thirty-nine were not placed (hereafter referred to as "pending-placement"). For this study, the total population of 62 students was divided into 23 on-placement and 39 pending placement. Thus, the dependent variable was the placement status. Using survey research, the study probed the participants to determine their level of vulnerability to health and behavior stressors. The health (i.e., nutrition and diet) stressors and behavior (i.e., emotional and social) stressors were the independent variables. The How Vulnerable Are You To Stress Inventory was administered to the 23 on-placement students, with their approval, at a scheduled workshop during the spring 2000 semester. During the summer of 2000, an e-mail letter was sent to the 39 pending placement students requesting their voluntary participation in the study. Twenty-one of the thirty-nine pending placement students voluntarily stopped by the Cooperative Education office to complete the Inventory. The study found that there was a significant association between the levels of vulnerability to behavior stressors and placement status.

Levels of Stress Between Cooperative Education Students On-placement and Pending Placement

Exposure to stressful situations is among the most common human experiences. These types of situations can range from unexpected calamities to routine daily annoyances (Anisman, 1999). In response to stressors, a series of behavioral, neurochemical, and immunological changes occur that ought to serve in an adaptive capacity (Anisman, 1999). As commonly used, the term "stressor" indicates a situation or event appraised as being aversive in that it elicits a stress response which taxes a person's physiological or psychological resources as well as possibly provokes a subjective state of physical or mental tension (Anisman, 1999).

In general, stressors may be psychogenic and /or neurogenic. Psychogenic stressors are purely of psychological origin (e.g. anticipating and adverse event, experiencing the death of a loved one, or caring for a chronically ll person) (Anisman, 1999). Neurogenic stressors involve a physical stimulus (e.g., a headache, bodily injury, or recovery from surgery) (Anisman, 1999). Specifically, processive stressors may primarily activate the limbic system, a region of the brain comprising interconnected structures that are associated with arousal, emotion, and goal-directed behavior (Anisman, 1999). Processive stressors are those that require appraisal of a situation or involve high-level cognitive processing of incoming sensory information (Anisman, 1999).

Irrespective of the experimental approach, research clearly indicates that stressors, which are usually multidimensional, produce not only immediate actions but also

protracted effects secondary to the primary stressor (Anisman, 1999). For instance, stressful experiences are often followed by persistent brooding (i.e., rumination) that may in itself be stressful (Anisman, 1999). And some events (e.g., bereavement) may have secondary effects (e.g., financial burdens and loss of social support). Whereas some stressor effects may diminish over time, the effects of other stressors may increase (Anisman, 1999). Continuous unsuccessful employment interviews can in itself be a stressor, which can lead to more stress from brooding unless the individual feels he or she has control.

Perceived controllability clearly influences some (but not all) stress responses. For example, uncontrollable stressors provoke behavioral disturbances in animals that are not induced by controllable stressors of comparable severity (Anisman, 1999). Some investigators interpret these differences as the consequences of "learned helplessness"(Anisman, 1999). The excessive strain on, or the resulting variations of, neurotransmitters many increase an individual's vulnerability to pathological states (Anisman, 1999). In effect, an individual's response to a stressor may be dictated by the availability of appropriate coping strategies, and certain behavioral disturbances may be most pronounced under conditions where stressor controllability is not possible or where coping responses are ineffective (Anisman, 1999). The stress inventory, How vulnerable are you to stress, is an instrument that can be used to help determine an individual's stressor limitations.

Many Human Resource (HR) managers agree that one of the oldest recruitment

methods– the interview– is still the best (Yarborough, 1994). They believe when it comes to the interview, nothing screens an applicant better. HR managers would prefer spending two to three hours talking with candidates, believing this time investment saves the company money in the long run, in particular, when looking for management personnel to determine suitability of managing other people. It can be detected when a person's temperament – will cause him or her will fly off the handle – and whether the person has a dominant enough personality to impact as a leader (Yarborough, 1994).

Not all neurochemical or physiological processes are differentially influenced by stressor controllability. The ability to respond rapidly to a stressful challenge may have greater adaptive value than the ability to assess controllability (Anisman, 1999). Thus, systems designed for immediate response (e.g. activation of the HPA axis or the immune system) ought to react comparably to both controllable and uncontrollable stressors (Anisman, 1999). Conversely, systems that are uniquely involved in the appraisal of processive stressors might react differently to controllable than to uncontrollable stressors (Anisman, 1999). We need to look for an all around outlook in a person.

Studies in humans support the view that stressor controllability may be fundamental in determining the stress response, despite the fact that in a great number of instances, control is actually illusory (Anisman, 1999). Broadly speaking, coping can be subdivided into several subtypes, including emotion-focused coping (e.g., emotional expression, emotional containment, blame, avoidance, denial, and passivity); problem-focused coping; social support; cognitive restructuring; and problem-solving (Anisman,

1999). Researchers often assume that emotion-focused coping is a relatively ineffective strategy, whereas social buffering, problem-solving, and cognitive restructuring may be more efficacious (Anisman, 1999).

Both the psychological and physiological responses to a given stressor may vary greatly between individuals, thereby influencing the type of pathology to which a person is vulnerable. Such vulnerability may be influenced by genetic factors (Anisman, 1999). Individual or genetic differences in the stress response may indicate either an overall increase of reactivity or a highly specific increase in the reactivity of a particular biological system (Anisman, 1999).

The maintenance of a relatively stable balance of physiological functions (i.e., homeostasis) is constantly challenged by illness; injury; hostile environmental conditions; unpleasant emotional states; and even certain normal functions, such as sexual activity and exposure to new environments (Anisman, 1999). Depending on the person, they will handle illness, injury and other stressors differently.

When you're overloaded, stress makes you forgetful, indecisive and unable to concentrate (Laliberte, 1995). This is interview suicide. A Human Resource interviewer can assume such things as lack of interest in the job to inability to perform with indecisive responses or lack of concentration.

Sleep and Stress

Being stressed at work or home and short on sleep are the most common stressors. Alone, they're enough to make us droop during the day, but they're often compounded by

added energy drains such as poor nutrition, lack of exercise and low-grade depression (Laliberte,1991). Everybody's sleep needs are different, but on average, people snooze 7 to 7 ½ a night, which is about 1 ½ hours too little, says Timothy Roehrs, Ph.D., director of research at Henry Ford Hospital's Sleep Disorders and Research Center in Detroit (Laliberte,1991). Two separate sleep studies conducted by Roehrs pointed to 9 hours as the average human sleep requirement (Laliberte,1991). He says, "It seems that the brain needs that much time for recovery (Laliberte,1991). An occasional night that is sleepless will not hurt, although your focus and creativity will be diminished the next day. Researchers in England found that sleep loss taxes creative thinking most (Laliberte,1991). Their research found the participants performance on finding new approaches to problems was substantially impaired after sleep loss (Laliberte,1991). If a person is worried about an interview the next day, they many not sleep well, which could cause some of the problems previously mentioned.

Adults who get at least seven hours of sleep a night are significantly less likely to feel stress every day (Kate, 1994). Adults who sleep six or fewer hours each night are significantly more likely than those who get more sleep to feel great stress every day–43 percent say they do (Kate, 1994). The best method for reducing tension maybe sleep–or perhaps people don't sleep when they're experiencing tension (Kate, 1994). College-educated adults also get more sleep than those who haven't attended college: 70 percent report sleeping seven to eight hours each night, compared with 60 percent of those who haven't attended college (Kate, 1994).

Sleep disorders can cause lapses in attention and fatigue in the daytime, especially when you're faced with repetitive tasks requiring complete attention, says Peter Hauri, Ph.D., administrative director of the Mayo Clinic Sleep Disorders Clinic and author of No More Sleepless Nights(Wiley & Son, 1990). The more attention demanded by the job, the greater effect lack of sleep can have on your performance (Gutfeld, 1993). If during an interview the interviewer picks this up during the interview, they may decline offering a position.

Insomnia isn't a disorder, but a symptom of other problems, from stress to depression or chronic arthritis, says Dr. Walsh (Gutfeld, 1993). How much sleep is disrupted will dictate how severe the grogginess is during the day (Gutfeld, 1993). This grogginess can be dangerous. Insomniacs have roughly 2 ½ times more accidents than normal sleepers, says Dr. Hauri (Gutfeld, 1993). We need to keep a regular sleep schedule to help reinforce our sleep rhythm. Sleep is partially controlled by your biological clock, says Dr. Walsh (Gutfeld, 1993).

You may also just be cheating yourself knowingly of slumber, causing your mushiness (Gutfeld, 1993). An untold number of accidents can be attributed to lack of sleep because we're a nation of sleep skippers, and that courts disaster. You have to realize you need sleep to lead a productive life (Gutfeld, 1993). Experiment with your sleep schedule, says Dr. Hauri (Blaun, 1996). Try seven hours each night for one week. If toward the end of the week you're tired during the day, add an hour (Blaun, 1996). Just seeing how well one night of sleep works isn't enough–your body needs to adapt, says Dr.

Hauri.

In order to carry out its many cognitive tasks and make you happy, calm, relaxed, energized, or motivated the brain deploys a multitude of biochemicals. Helping orchestrate every thought , feeling, and movement are the neurotransmitters, perhaps the best known of which is serotonin, whose functions include sleep regulation and anxiety reduction (Blaun, 1996). Ensuring there is enough serotonin in our diets is essential to help reduce stress and maintain homeostasis.

Emotions and Stress

Clinical depression is extremely common in America, and the hallmark of it is tiredness, says Dr. Mirkin (Laliberte, 1991). A large-scale population study by the National Center for Health Services Research found that psychological, not physical, factors are the most powerful predictors of exhaustion (Laliberte, 1991). If you're depressed or anxious, you're seven times more likely to suffer from chronic fatigue (Laliberte, 1991).

Recent research suggests that when you're depressed, your body produces more adrenaline, says Sr. Brown (Laliberte,1991). "It's like a car running at rapid acceleration with the brake on," he says. It saps you both physically and mentally (Laliberte,1991).

Staying in shape–both physically and mentally–despite these demands is difficult, but vital. Making positive choices to take care of yourself can help you do a better job, improve your self-esteem and appearance, mitigate such conditions as high blood pressure and obesity, and give you more energy (Fisher,1995). The first and most

important step is to make a personal commitment to your health–before the heart attack or bleeding ulcer. ...find ways to exercise, eat right, and sleep under any circumstances (Fisher, 1995).

A diet that draws heavily on fatty foods and only lightly on fruits and vegetables isn't just bad for your heart and linked to certain cancers–it may also be a major cause of depression and aggression (Blaun, 1996). Allowing one of these emotions to flare up can end an interview quickly.

What is the blood fat-depression connection? In a word, viscosity. A high triglyceride level increases blood sluggishness, says Glueck (Blaun, 1996). Viscosity makes it harder for blood to transport sufficient oxygen to brain cells. Those affected may exhibit symptoms of so-called organic brain syndrome, among them depression and hostility (Blaun, 1996). Other investigators have also observed a positive correlation between triglyceride values, hostile acts, and a domineering attitude (Blaun, 1996).

Glueck's research suggests that high blood-fat levels can be the sole cause of depression in some cases, and that they may exacerbate mental problems due to other causes (Blaun, 1996). A diet high in saturated fat not only can make you depressed and downright antisocial, it can also impair general mental performance (Blaun, 1996).

N-3 fatty acids– popularly called omega-3's–are known to be particularly crucial for proper development of the human brain (Blaun, 1996). All nerve signals must pass through the lipid-rich cell membrane of neurons. In addition, as learning and memory forge new connections between nerve cells, new membranes are formed to sheath them

(Blaun, 1996). All brain cell membranes continuously need to refresh themselves with a new supply of fatty acids. Preliminary research suggests that EFAs particularly n-3s–are best suited for optimal brain function (Blaun, 1996).

While consuming too much saturated fat and too mach fat overall, many North Americans may not be consuming anywhere near enough n-3 fatty acids for optimum brain health (Blaun, 1996). The polyunsaturated vegetable oils touted as healthful for the heart and so widely used in cooking and in prepared food–corn, safflower, and sunflower oils- have almost no n-3s (Blaun, 1996). So the old saw about fish being brain food is true; they are rich in n-3s (Blaun, 1996). Long a proponent of adding more n-3-rich fatty fish to the diet as a way to reduce the risk of heart disease, Connor contends tat the special n-3s in fish oil are tailor-made for the brain (Blaun, 1996).

Army researchers are also looking at the effects of supplemental tyrosine, the amino acid that is the precursor to such neurotransmitters as dopamine, epinephrine (or adrenaline), and norepinephrine(noradrenaline)(Blaun, 1996). All three help regulate levels of arousal and anxiety, and are the major players in the brain's response to stress (Blaun, 1996). Environmental stress depletes the blood of tyrosine, limiting the amount available for neurotransmitter manufacture (Blaun, 1996).

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(Anisman, 1999). The excessive strain on, or the resulting variations of neurotransmitters may increase an individual's vulnerability to pathological states (Anisman, 1999). In effect, an individual's response to a stressor may be dictated by the availability of appropriate coping strategies, and certain behavioral disturbances may be most pronounced under conditions where stressor controllability is not possible or where coping responses are ineffective (Anisman, 1999).

Eating Habits and Stress

Students have additional commitments that may keep them from eating healthily. Start skipping meals and using caffeine, and you'll be tired and short tempered. Eat poorly, and gorging on fat and sweets, and you will feel like a wad of dough (Fisher, 1995). With proper planning the are ways to plan and maintain a healthy diet.

Refined sugar and carbohydrates, foods which have refined sugar and refined carbohydrates – such as white flour, rice and high fructose corn syrup – are stressors, and a body under stress has an even harder time processing these carbs (Zucker, 2000). In addition, taking in a lot of sugar in a short period of time (or missing meals and then consuming sugar) can result in hypoglycemia, which is marked by headache, dizziness, anxiety, trembling and irritability (Zucker, 2000). A sugar-caused stress response and accompanying cortisol production raise blood glucose levels which, in turn, burdens the pancreas (Zucker, 2000). This heightened blood-sugar level leads to insulin resistance and can bring on fatigue, depression and emotional instability (Zucker, 2000).

Stress damage can be caused to your body by consuming the wrong kinds of fat.

The consumption of too much fat prevents your body from properly using carbohydrates, initiating the cascade of problems (Zucker, 2000).

We can't get away from it, you are what you eat. After all, the very, tissues of your body, the fuels that power every cell, the hormones that keep you humming, all must ultimately be furnished by the foods you eat (Blaun, 1996). For while the foods we eat have measurable effects on the body's performance, they may prove to have an even more critical influence on how the brain handles its tasks (Blaun, 1996). The brain is an extremely metabolically active organ, making it a very hungry one, and a picky eater at that (Blaun, 1996). The idea that the right foods, or the natural neurochemicals they contain, can enhance mental capabilities–help you concentrate, tune sensorimotor skills, keep you motivated, magnify memory, speed reaction times, defuse stress, perhaps even prevent brain aging–is not idle speculation (Blaun, 1996).

In Food Components to Enhance Performance, a groundbreaking report produced for the army by the National Academy of Sciences in 1994, researchers pulled together what's known about food and behavior (Blaun, 1996). Choline supplementation, the report concludes, enhances memory and reaction time in animals, particularly aging animal (Blaun, 1996). It also enhances memory in people, scant human studies show (Choline supplementation minimizes fatigue) (Blaun, 1996).

The brain's source of energy is, almost exclusively, glucose, a simple sugar to which all dietary sugars and other carbohydrates are ultimately broken down (Blaun, 1996). How best to stoke your brain with glucose? The variety of carbohydrate foods

found in a balanced diet will take care of the brain's energy needs (Blaun, 1996).

Caffeine and Stress

Among other things one of the best things students are known for is their consumption of caffeine, especially when the are cramming for a test or writing that last minute paper.

Some–though not all–people often experience the symptoms of caffeine withdrawal, which include faintness, irritability and shakiness when the caffeine level in their blood drops, Says Dr. Kenney. (Gutfeld, 1993). Getting mugged because caffeine's half-life in the body is roughly 3 ½ to 4 hours, by late afternoon, the morning buzz has finally made it out of your system (Gutfeld, 1993).

A new study of 62 regular-coffee slurpers underlines caffeine's seesaw effect (Gutfeld, 1993). Coffee drinkers abandoned their mugs and instead got their caffeine in capsule from for two days (an amount equal to about 2 ½ cups of java) (Gutfeld, 1993). During a second two-day period, they received a dummy pill containing no caffeine (Gutfeld, 1993). No one knew which pill they were taking during the study (Gutfeld, 1993). During the caffeine-free period, half of the group experienced extreme fatigue, lack of concentration and impairment of motor performance (Gutfeld, 1993).

Anything containing caffeine, like coffee, tea and cola, is a potential pseudostressor. Theobromine and theophylline – both found in tea – are also sympathomimetics (Zucker, 2000). These chemicals produce a pseudostress response by accelerating metabolism and increasing alertness, and cause the release of stress

hormones (such as adrenaline)-- which increase the heart rate and blood pressure (Zucker, 2000). These chemicals also make the nervous system super-reactive, which means that it becomes more likely that stressors present in the body will produce a stress response (Zucker, 2000). These beverages are also all diuretics, things which increase the rate at which the body eliminates fluid (Zucker, 2000). The diuretic effect, over time, causes dehydration and thickening of the blood, digestive disorders and metabolic imbalance (Zucker, 2000).

Caffeine works by blocking the neurotransmitter adenosine, which normally calms the brain (Blaun, 1996). The clearest effect of caffeine on cognition is its ability to enhance vigilance. Caffeine helps sustain attention during performance of various cognitive tasks for long periods of time (Blaun, 1996).

Alcohol and Stress

While alcohol may help you fall asleep, the net effect is a negative one (Gutfeld, 1993). It's metabolized fast and your brain ends up rebounding in the second half of the night, leaving you stimulated (Gutfeld, 1993).

With the competitiveness of the current market, as well as stock holders scrutinizing the return on their money, employers are looking very careful before they hire new employees. Employees who drink heavily or who abuse or are dependent on alcohol can undermine a workforce's overall health and productivity (Frone, 1999). To better understand the reasons behind employee abusive drinking and to develop more effective ways of preventing problem drinking in the workforce, researchers have

developed a number of paradigms that guide their research (Frone, 1999). One such paradigm is the alienation/stress paradigm, which suggests that employee alcohol use may be a direct or indirect response to physical and psychosocial qualities of the work environment (Frone, 1999).

Additional concerns for employers with regard to a potential employee and alcohol would be: From a managerial perspective, the specific problems created by alcohol or other drug (AOD) use may include impaired performance of job-related tasks, accidents or injuries, poor attendance, high employee turnover, and increased health care costs (Ames, 1997; Dawson, 1994; Frone,1998; Martin, 1994; Normand, 1994; Roman and Blum 1995).

For centuries, people have used alcohol to relieve stress–that is, the interpretation of an event as signaling harm, loss, or threat (Sayette, 1999). The organism usually responds to stress with a variety of behavioral, biological, and cognitive changes. Alcohol consumption can result in a stress-response dampening (SRD) effect, which can be assessed using various measures (Sayette, 1999). Numerous individual differences and situational factors help determine the extent to which a person experiences SRD after consuming alcohol (Sayette, 1999). Individual differences include a family history of alcoholism, personality traits, extent of self-consciousness, cognitive functioning, and gender (Sayette, 1999).

Situational factors influencing alcohol's SRD effect include distractions during a stressful situation and the timing of drinking and stress (Sayette, 1999). The attention-

allocation model and the appraisal disruption model have been advanced to explain the influence of those situational factors (Sayette, 1999). The media and the entertainment industry also consistently portray drinking as a way to relieve stress. Researchers believe that alcohol's anticipated stress-relieving effect is a primary motivation for many people to consume alcohol, despite the often harmful consequences of drinking (Sayette, 1999).

When an employer interviews a perspective employee they are looking for responses from the employee that will tell them what to expect from that person. The perception of stress elicits a varied response that may involve a wide range of behaviors (e.g., escape or avoidance behavior); biological responses; and , in humans, subjective awareness of a distressed emotional state (Sayette, 1999). Stress- related biological responses include psychophysiological reactions, such as changes in skin conductance (e.g., from sweating), muscle tension, and cardiovascular responding (e.g., changes in heart rate), as well as changes in the activation of various brain regions (Sayette, 1999). Alcohol consumption can reduce the magnitude of an organism's response to stress (Sayette, 1999). If an interviewee has alcohol in their system during an interview they may suffer from such effects as anxiety, tension, nervousness or apprehension.

Alcohol consumption can reduce the magnitude of an organism's response to stress, this reduction is called stress-response dampening (SRD) (Levenson, 1980). Highly self-conscious people are most likely to experience alcohol's SRD effects. According to this self-awareness model, self-conscious people constantly evaluate their own performance and may experience stress if the result of that self-evaluation is

negative (Hull, 1987). Alcohol consumption impairs the drinker's ability to encode information from the environment with respect to its relevance to the self (Hull, 1987). Additionally, "alcohol has been shown to disrupt the processing of new information in the brain (i.e., cognitive processing) (Sayette, 1999)." This in turn could make it difficult for the interviewee to respond appropriately to questions during an interview.

Exercise and Stress

If an event is perceived as negative or if too many demands are placed on an individual, it will result in distress (Finnicum, 1998). Distress is a state of physical or psychological imbalance resulting from exposure to intense, prolonged, or unrelenting demands. Signs and symptoms of distress include anxiety, depression, sleep difficulties increased cravings for drugs or food, mood swings, fatigue, and headaches (Finnicum, 1998).

Stress management is a process that requires the assessment of the stressors in one's life and the identification of the strategies to deal with them in a manner that is health-enhancing (Finnicum, 1998). Some of the most frequent types of health promotion interventions in the workplace are stress-management activities. Positive coping skills, along with changes in lifestyle and attitude, can help one prepare mentally for stressful situations (Finnicum, 1998). It is also important to seek outlets for relaxation that aid in the healing and recovery process when a negative stress response occurs (Finnicum, 1998). More and more cities are creating recreation centers with planned outdoor activities. Groups get together a few times a week to run or walk. Walking provides a

good workout, an opportunity to socialize, and an outlet for stress release (Finnicum, 1998).

If an individual is dealing with events that are cataclysmic in nature and largely unpredictable, it will typically require something besides outdoor recreation (Finnicum, 1998). Specifically, individuals can continue to take care of their bodies the best they can by eating properly and getting proper amounts of rest; utilizing the support systems that are typically provided in times of misfortune; acknowledging and managing the wide range of emotions they will experience in response to a disaster; and identifying and employing various relaxation techniques such as deep breathing, progressive muscle relaxation, and guided imagery (Finnicum, 1998).

On the other hand, if stress is the result of either personal or background stressors, there are a number of outdoor recreation activities that can be used as part of a positive coping system to eliminate or reduce the impact of the stressful event (Finnicum, 1998).

With all the media hype about getting enough relaxation in our lives, we do not generally need to be reminded to play; but perhaps we need to be reminded of the many benefits that can be derived from play. Life requires continual adjustment in order to maintain balance, and managing stress through outdoor recreation can be an important and valuable part of that balancing act (Finnicum, 1998).

As the instructors are wont to repeat, yoga is not an exercise. The goal of this 4,000-year-old discipline is to heal. It goes about doing this by putting the body through a series of intense anaerobic postures. These can be quite taxing, but they're not designed

to pummel the body the way, say, training for a marathon does. Most of the postures require strength and balance with a meditative focus that calms the nerves. Balance, relaxation, reduction of pain in the spine or the joints-such things yoga is assuredly capable of delivering. True believers are also convinced that a good yoga session has a beneficial effect on every organ, from the spleen to the liver (Apr 1999).

Although the role of stress in psychological adjustment has been apparent for decades, newer research has shown that psychological stress can influence the development or symptoms of various physical illnesses, such as hypertension, recurrent headache, and the common cold (Sarafino, 1999). Being able to assess and reduce student stress is an important concern for college counseling and health centers because of students' many adjustment and physical health problems (Sarafino, 1999). Professionals, therefore, need to be aware of valid instruments to measure and track stress (Sarafino, 1999).

Stress Levels of Cooperative Education Students

On-placement and Pending Placement

Rationale and Purpose

Since stress may be a leading cause of unsuccessful employment interviews, stress was the subject selected for further investigation. This document contains background studies from several different areas concerned with stress and its effect on emotions, sleep habits, eating habits and work habits, just to name a few.

Hans Selye, considered the father of the stress concept, described stress as a nonspecific response by the body to any demand placed upon it. Stressors are the external events that cause the stress response (Finnicum, 1998). Stressors can be categorized into three areas: cataclysmic events such as floods, tornadoes, and earthquakes; personal events like a death, losing a job, or getting a divorce; and background events such as overcrowding, noise, or family problems (Finnicum, 1998). Most of the stressors we face today are chronic and ongoing and often occur simultaneously (Finnicum, 1998). Rush-hour traffic, a packed schedule, relationship problems, illness, and money worries are examples of potentially simultaneous stressors (Finnicum, 1998). These events can be unpredictable and cannot be completely avoided (Finnicum, 1998).

A number of studies have indicated that college students experience substantial stress resulting from a variety of sources (Greenberg, 1981; LaCivita, 1982; Hyner & Sciacca, 1986). Many of these students appear to lack the knowledge and skills needed to effectively

cope with their stressful experiences(Johansson, 1991; Hyner & Sciacca, 1986). Ineffective coping strategies may contribute to student health problems, increased demand for health services, and higher student attrition rates (Landward & Hepworth, 1984; Mechanic & Greenly, 1976; Selye, 1976).

Students under greater stress also exhibit lower levels of self-esteem and reduced perceptions of their health status (Hudd, 200). Researchers have determined that students experiencing high levels of stress are more prone to practice bad habits (e.g., eating junk food). Additionally, students often find role conflict is a common part of the college experience, increasing their levels of stress. College students must learn to balance the competing demands of academics, developing new social contacts and being responsible for their own daily needs (e.g. nutrition and clean clothing) (Hudd, 2000).

Since dealing with stress may be a primary component during an employment interview, stress was the subject selected for concentration investigation. This document contains the background for the study; the rationale and purpose; methods section; description of the participants; design; instrument (How vulnerable are you to stress); procedures. The results section contains: an explanation of statistical conclusions; a discussion, including: summary and integration of results, explanation for findings, implications of findings, limitations concerned with the design and internal validity, external validity and generalizability, analysis and statistical power, and measurement. Finally, this paper also contains recommendations for future study of stress and students.

When attempting to manage stress, it is important to understand that stressors exist

in the eye of the beholder. Every event does not necessarily cause distress (Finnicum, 1998). Stressors themselves are less responsible for the stress response than the way we react to stressful events (Finnicum, 1998). In other words, stressors are unique perceptual events that require individual adaptation (Finnicum, 1998).

If an incident is seen as positive it will result in eustress, and the individual will react to the situation in a way that promotes well-being (Finnicum, 1998). Eu- is the Greek prefix for good. So, eustress results in a person adapting as positively as possible to any of the cataclysmic, personal, or background events that may occur to him or her (Finnicum, 1998).

In an attempted to determine how students viewed stress James H. Humphrey asked students for their definition of stress. The students defined stress as: important to release the pressure you feel, constant pressure on the body, the pressure of problems we deal with every day, pressure that is put on you or your brain from a given situation, a feeling of having to deal with pressure, pressure that is harmful to you (Humphrey, 1982).

The effects of excess stress on healthy behaviors is less well researched within the college-aged population (Hudd, 2000). Students do not take into consideration the effects of stressors such as college norms that define certain types of behavior as "appropriate" under certain conditions (e.g., staying up all night to study for an exam, may be stress inducing and may lead to less healthy practices) (Hudd, 2000).

Students who do not cope effectively with the stress they encounter in college environments are at higher risk for health problems and academic failure (Sciacca, 1992). Additional stress is brought on for the student if they remain unemployed after unsuccessful

interviews. Unemployment is a major life change that involuntarily deprives the worker of the stabilizing influence of job demands, removing the mechanisms that provide continuity and order in daily life (Trice, 1992). With this in mind, the relationship of levels of stressors and success in obtaining employment needs to be investigated.

The purpose of this study is to determine the relationship, if any, between the level of stressor vulnerability and a student's successful job placement. Although there are numerous articles and books on the subject of stress, certain factors have not been addressed. For example, this researcher did not find any studies investigating the possible association between someone with a moderate to high level of vulnerability to stress and his or her subsequent placement in a co-op position in a public or private agency/company. Although there may be other factors that are involved with the successful placement, stress may be associated with the over-all outcome of the placement.

Hypotheses:

H1: There is a relationship between levels of vulnerability to health and behavior stressors and placement status (on-placement and pending-placement).

Ho: There is no relationship between levels of vulnerability to health and behavior stressors and placement status (on-placement and pending-placement).

Method

Participants

Out of a total placement pool population of 62 students applying for co-operative education positions during the Spring 2000 semester, this sample of data was obtained from

44 of those students. While all 62 of the students were invited to participate in the study, 44 volunteered to complete the How Vulnerable Are You To Stress Inventory administered by the College's Director of Cooperative Education. The participants consisted of sophomores through seniors ranging in age from 19 to 50 years old. Scores were obtained during the Spring, Summer, and Fall 2000 academic semesters.

Instrument

Miller, Smith, & Mehler found The How Vulnerable Are You To Stress Inventory to be a reliable and valid instrument. The Inventory is one sub-scale of a larger 238 item instrument called the Stress Audit. The How Vulnerable Are You To Stress sub-scale of the Stress Audit measures variables that moderate or buffer the effect of stressors. The How Vulnerable Are You To Stress item pool was generated from clinical experience in a stress management clinic, and from research measures which have been predictive of health status. Items sample eating, sleep, exercise, and recreational habits, alcohol, caffeine and tobacco use, ability to express emotions, and social and spiritual resources (Miller, Smith, & Mehler, 1984).

Structurally, the How Vulnerable Are You To Stress Inventory used in this study is a 20-items scale. Item responses are made on a Likert scale ranging from- almost always to never- (1-5) engaging in a specific health related behavior. The scale is well constructed in terms of moderate variables. The comprehensive format of the How Vulnerable Are You To Stress Inventory and the reliability of the scales form the basis for a potentially highly valuable measurement instrument in the area of stress research and services (Peterson, 1987).

The instrument takes about five to ten minutes to complete.

All reliability figures are extracted from the Peterson review and the Miller, Smith, & Mehler Provisional Stress Audit Manual. Peterson reported that the scale has good internal consistency reliability and test-retest reliability.

Inter-scale correlations suggest an appropriate factor structure and semi-independence of the How Vulnerable Are You To Stress sub-scale (Peterson, 1987). Although the changes are small, this sub-scale shows significant T-test differences in the expected direction. Test-retest reliability coefficients have been established for the How Vulnerable Are You To Stress sub-scale on several groups with different intervals between testings. How Vulnerable Are You To Stress alpha (internal consistency) reliability coefficients across three groups were nurse employees of University Hospital one week apart, .88; graduate students in a School of Professional Psychology two weeks apart, .84; and college freshmen six weeks apart, .63 (Miller, Smith, Mehler, 1984). The magnitude of the coefficients is quite robust indicating a rather small standard of error of measurement for this sub-scale (Miller, Smith & Mehler, 1984).

Moderate support for the construct validity of the How Vulnerable Are You To Stress sub-scale (using orthogonal rotations and factor analytic procedures) was found by assessing the relative agreement of this sub-scale with the MMPI, another instrument purporting to measure the same properties or constructs.

A major consideration from the standpoint of validity is how well two measures with a theoretical relationship correlate with one another at a given point in time. Concurrent

validity of the How Vulnerable Are You To Stress sub-scale was constructed to determine the relationship between it and the rest of the Stress Audit sub-scales. The How Vulnerable Are You To Stress is significantly correlated with the Sources and Symptoms sub-scales of the Stress Audit. However, these correlations are not as powerful as one might wish given the amount of literature bearing on the significance of lifestyle, health behaviors, and coping resources: combined sources sub-scale, .36; and combined symptoms sub-scale, .41. However, the Sources and Vulnerability scales together accounted for approximately 75% of the variance in symptoms reported on the Stress Audit (Miller, Smith, & Mehler, 1984).

Empirical validation was established by drawing data from 434 college students who completed two administrations of the Stress Audit 6 weeks apart. The results were that the mean score for the How Vulnerable Are You To Stress sub-scale was higher during the exam period, 45.7 (High Stress) as compared to the early weeks of the following semester, 44.5 (Low Stress). The significance level was .0001 (Miller, Smith, & Mehler, 1984). Peterson (1987) concluded that the How Vulnerable Are You To Stress sub-scale is well constructed in terms of the empirical evidence on moderate variable. This inventory was the only instrument used to obtain the data for this thesis.

Procedure

Permission was obtained from the individual students to have the inventory administer to them, as well as, gaining their permission to use the data obtained. Confidentiality of students was maintained throughout the study. The On-Placement and Pending Placement students' scores were analyzed to determine if there was an association

between the levels of stress and placement status.

This investigation actually had four dichotomized independent variables—nutrition and diet stressors, life style stressors, emotional stressors, and social stressors—but the four were necessarily confounded; nutrition and diet and life style stressors were combined to create health stressors, and emotional and social stressors were combined to create behavior stressors. The variables used to assess health (i.e., vulnerability to stress levels determined from inventory questions numbers 1, 2, 5, 6, 7, 8, 14, 17, 19, and 20) stressors and behavior (i.e., vulnerability to stress levels determined from inventory questions numbers 3, 4, 9, 10, 11, 12, 13, 15, 16, and 18) stressors were found in the How Vulnerable Are You To Stress Inventory instrument.

During the spring 2000 semester, 62 students were sent on interviews with public and private agencies/companies for potential placement in cooperative education positions within the agencies/companies. Out of this total population of 62 interviewed, twenty-three were placed in positions (hereafter referred to as "on-placement") and thirty-nine were not placed during the semester (hereafter referred to as "pending-placement"). For this study, the total population of 62 students was divided into 23 on-placement and 39 pending placement. The How Vulnerable Are You To Stress Inventory was administer to the 23 on-placement students, with their approval, at a scheduled workshop during the spring 2000 semester. Students were asked to rate each item on the inventory from 1(always) to 5 (never), according to how much of the time the statement was true of them. The session to complete the inventory lasted five to ten minutes.

During the summer of 2000, an e-mail letter was sent to the 39 pending placement students requesting their voluntary participation in the study. Twenty-one of the 39 pending placement students voluntarily stopped by the Cooperation Education office to complete the Inventory. Students were asked to rate each item on the inventory from 1(always) to 5 (never), according to how much of the time the statement was true of them. Each session to complete the inventory lasted five to ten minutes.

The students were divided into two groups: on-placement students with a total of 23 participants (i.e., twenty-three students who were placed in a co-op position after their interview) and pending placement students with a total of 21 participants (i.e., twenty-one students who met all of the school's and potential employer's listed requirements to participate in the co-op program, but were not placed in a co-op position after their interview). Thus, the dependent variable was the placement status. Both groups were used to test the research hypotheses.

Design

The study design was parallel-samples using collected survey data. In addition to studying the vulnerability to health and behavior stress levels of all the students interviewed for co-op positions, the study looked at the sample population in relationship to those students who were placed and not placed in those jobs. Each of these two sample groups responded to an identical How Vulnerable Are You To Stress Inventory. This allowed for the two sample groups to be compared.

More specifically, this research involved determining whether there is any relation

between the an individual's level of vulnerability to the health and behavior stressors and his or her placement status. The independent variables consist of the health and behavior vulnerability to stress scores. The health stressor variable consist of two main stressors, nutrition and diet and lifestyle; while the behavior stressor variable consist of two main stressors, emotion and social. The independent variable scores were divided into low, medium, high, and excessively high levels of stress. Placement (i.e., on-placement and pending placement) status constitutes the dependent variable.

The independent variables were used to determine if there was a relationship between the levels of vulnerability to health and/or behavior stressors and placement status. Various descriptive statistics were used to analyze the data in this study. A 4x2 Chi-Square, X^2,was used to determine its significance. The Statistical Package for the Social Sciences (SPSS) for Windows was utilized to generate the results of this analysis.

This design was used because it allows for the two nominal scale variables used in this study to be cross-classified. The number of students in each placement status whose health and behavior stressors scores placed them in one of the four vulnerability to stress levels was obtained and evaluated as to whether or not they differ significantly from those which would be expected under the theoretical assumptions that guided this study. The null hypothesis is that there are no differences among the levels of vulnerability to health and behavior stressors with respect to on- or pending-placement status since the two placement status groups were drawn from the same population.

Results

The results from the data analysis as presented in this section are discussed using descriptive statistics. Explanations about where the dependent variables (on-placement or pending variable) are most similar and most different are given first, followed by an examination of the data for indications of a possible association between the health and behavior stressor variables and the placement status variables. The data are further analyzed for statistically significant relationships between the health and behavior stressors and the on-placement status and pending placement status of co-op students.

Descriptive Data

First, an analysis of the data examined sample health and behavior stress level means, medians, and modes, and frequency and proportion distributions. A frequency distribution was completed to investigate the skew and other features that would help the researcher determine which of the various statistics were appropriate for this particular study. A frequency distribution of Vulnerability to Health Stressor scores of 44 on-placement and pending placement co-op students are depicted in Table 1. Scores on the Health Stressor Index ranged from 14 to 41, with scores from 14 to 19 indicating low levels of vulnerability to health stressors and scores from 29 to 41 reflecting high to excessively high levels of vulnerability to health stressors.

The means, medians, and modes are presented in Table 2 according to vulnerability to health and behavior stress scores and standard deviations for co-op student placement status (on-placement and pending placement). This table shows the vulnerability to stress

mean, median, and mode scores and standard deviations for the 44 co-op students who completed the inventory.

An overview of Tables 1, 2 and 3 reflects an asymmetric, bimodal (Table 2), and unimodal (Table 3) distribution with the mean having the largest value of the three measures of central tendency. This suggests that the overall health and behavior vulnerability levels to stress for co-op students tends to be skewed toward the high to excessively high levels. This conclusion appears to hold true for nutrition and diet and lifestyle stressors that makeup the health stressor category as well as for the social stressors that makeup the behavior stressor category. However, the emotion stressors measures in the behavior category suggest that co-op students tend to be skewed toward the low vulnerability levels on the emotion scale. The heterogeneous distribution in the stressor scores shown in Tables 2 and 3 intimate wide inter-individual variability within a placement status.

Depicted in Table 3 is an ungrouped frequency distribution of Vulnerability to Behavior Stressor scores of 44 on-placement and pending placement co-op students. Scores on the Behavior Stressor Index ranged from 13 to 40, with scores from 13 to 16 indicating low levels of vulnerability to behavior stressors and scores from 28 to 40 reflecting high to excessively high levels of vulnerability to behavior stressors.

Table 1

Ungrouped Frequency Distribution of Vulnerability to Health Stressor Scores of 44 Co-op Placement Status Students

Scores	f	Scores	f	Scores	f
41	1	31	0	22	2
40	0	30	2	21	3
39	0	29	5	20	5
38	0	28	2	19	3
37	1	27	2	18	2
36	1	26	1	17	1
35	0	25	2	16	1
34	2	25	2	15	3
33	0	24	2	14	1
32	1	23	1		

Table 2

Mean, Median, and Mode Levels of Vulnerability to Stress Scores and Standard Deviations According To Health and Behavior Stressors for Co-op Placement Status (On-placement and Pending Placement)

Vulnerability To Stress Index Scores					
Health and Behavior Stressors	Mean	Median	Mode	Standard Deviation	Reliability Coefficients
	N = 44				
Health	24.27	23.50	20.00	6.53	.6846
Nutrition & Diet	10.84	10.00	10.00	3.77	.5764
Lifestyle	13.43	13.00	11.00	3.66	.4384
Behavior	23.95	23.00	15.00	7.19	.7815
Emotion	11.68	12.00	13.00	3.89	.5875
Social	12.27	12.00	8.00	4.01	.6836

Table 3

Ungrouped Frequency Distribution of Vulnerability to Behavior Stressor Scores of 44 Co-op Placement Status Students

Scores	f	Scores	f	Scores	f
40	2	30	1	20	3
39	0	29	2	19	2
38	1	28	3	18	2
37	0	27	1	17	2
36	0	26	2	16	2
35	1	25	2	15	4
34	0	24	1	14	1
33	0	23	2	13	1
32	2	22	2		
31	3	21	2		

When the frequencies were converted to proportions, we could say that the proportion of pending placement students in the high to excessively high levels of vulnerability to health stressors is .57, while the proportion of on-placement students at that level of vulnerability is .43.

On-the-other-hand, Table 5 indicates that the proportion of pending placement students in the high to excessively high levels to vulnerability to behavior stressors category is .76. Comparatively, the .30 of on-placement students in the high to excessively high behavior stressors category suggests an association that might be significant.

Nonparametric Statistical Results

To determine whether or not the hypothesis, "There is no relationship between levels of vulnerability to health and behavior stressors and placement status (on-placement and pending placement)," is consistent with the sample data, chi-square was used. A conservative approach was taken in determining the significance level by using .01 level and to not attempt to predict a direction of the difference. Chi-Square was computed for the stressors in order to determine whether or not a relationship exists between the vulnerability levels to health and behavior stressors and placement status (Table 6). The value of chi-square for the behavior stressor was found to have a significant statistical association with placement status at the .01 alpha level.

The reliability coefficient shows that 78% of the total variance of the inventories behavior stressors sub-scale and co-op student placement status are shared in common. The reliability coefficient of 0.78 also indicates there is a high possibility of internal

consistency and the average inter-correlation of the items that make up the behavior stressors sub-scale. This finding suggests that further measuring would tend to yield approximately the same results.

Table 4

Proportion of Placement Co-op Students

In Three Levels of Vulnerability to Health Stressors

	On-Placement		Pending Placement	
Health Stressors	No.	Proportion	No.	Proportion
Low	6	.26	5	.24
Medium	7	.30	4	.19
High to Excessively High	10	.44	12	.57
	23	1.00	21	1.00

Table 5

Proportion of Placement Co-op Students

In Three Levels of Vulnerability to Behavior Stressors

	On-Placement		Pending Placement	
Health Stressors	No.	Proportion	No.	Proportion
Low	7	.31	3	.14
Medium	9	.39	2	.10
High to Excessively High	7	.30	16	.76
	23	1.00	21	1.00

Table 6

Summary of The Chi-Square Performed To Determine If A Significant Association Existed Between The Levels of Vulnerability to Health and Behavior Stressor Scores and Co-op Placement Status (On-placement and Pending Placement)

Chi-Square	Value	DF	Significance
Health	1.62496	3	.65374
Nutrition & Diet	1.76273	3	.62308
Lifestyle	1.93874	3	.58522
Behavior	13.35487	3	.00393**
Emotion	3.67831	3	.29836
Social	7.86660	3	.04885*

N = 44, *p < .05, **p < .01, ***p < .001,

Discussion

This section is divided into the following two sub-sections: (1) a summary of the study, (2) findings and explanation of the findings.

Summary

This study was an effort to investigate the applicability of the How Vulnerable Are You To Stress Inventory to placement of students enrolled in the cooperative education program. An extensive review of the literature disclosed a lack of any research on the sensitivity of the How Vulnerable Are You To Stress Inventory to the health and behavior stressors dimensions of co-op student-job placement fit operating during the job interview phase of the placement cycle.

This study was undertaken to add to the data base regarding individual vulnerability to health and behavior stressors, and to address the implications of an individual's level of vulnerability to health and behavior stressors to placement in a co-op position. Anisman (1999) points out that stressors can elicit a response which taxes a person's physiological or psychological resources as well as possibly provokes a subjective state of physical or mental tension. While Yarborough (1994) emphasizes the importance of the interview as the best method for determining who gets placed in a job, Anisman (1999) points out that a given stressor may vary greatly among individuals and that the challenge is knowing what will cause stress and how to control the stressor(s). Therefore, there was a need for researchers to address the question of whether or not there was an association between the levels of vulnerability to health and behavior stressors captured by completion of the How Vulnerable Are You To Stress Inventory and co-op

job placement. Ideally, this study will improve understanding of the impact of the vulnerability levels to health and behavior stressors and job placement after an interview for co-op students.

The data in this study was taken from the How Vulnerable Are You To Stress Inventory. The How Vulnerable Are You To Stress Inventory was used to access the levels of vulnerability to health and behavior stressors within co-op students who were and were not placed in co-op positions within public and private agencies/companies after being interviewed for the positions. The instrument had respondents make choices from item responses made on a Likert scale. The 20 questions on the inventory were rated in terms of the health and behavior stress patterns suggested by Miller, Smith, and Mehler (1984).

Sixty-two students were sent on interviews with public and private agencies/companies for potential placement in cooperative education positions within the agencies/companies during the spring 2000 semester. Twenty-three students were placed in positions (referred to throughout the study as "on-placement") and thirty-nine students were not placed during the semester (referred to throughout the study as "pending-placement").

For this study, the total population of 62 students was divided into 23 on-placement and 39 pending placement. With their approval, the twenty-three on-placement students were administered the How Vulnerable Are You To Stress Inventory at a scheduled workshop during the spring 2000 semester. An e-mail letter was sent to

the 39 pending placement students requesting their voluntary participation in the study and twenty-one students voluntarily completed the Inventory.

The research involved an exploratory analysis of one hypothesis. One descriptor, placement, was selected to represent those students sent for interviews for designated co-op job positions in public and private agencies/companies. The placement variable included those students accepted for a job after their interview (on-placement) and those students not accepted for a job after their interview (pending placement).

Two descriptors were selected to represent the levels of vulnerability to stress, health stressors and behavior stressors. The health stressors included nutrition and diet stressors and lifestyle stressors; while the behavior stressors included emotional stressors and social stressors. The co-op student's placement status level of vulnerability to stress was determined by summing the scores recorded on the How Vulnerable Are You To Stress Inventory.

The Statistical Package for the Social Sciences (SPSS) program was used to compile and analyze the descriptive statistics. Because the very nature of the data obtained from this survey research excluded the possibility of a parametric test of significance, a nonparametric test of significance, chi-square, was employed.

Findings and Explanations of Findings

It had been hypothesized that there would be no relationship between the levels of vulnerability to health and behavior stressors and placement status (on-placement and pending placement). This study found there was no statistically significant relationship

between the levels of vulnerability to health stressor and placement status. The null hypothesis was retained. However, the study did find a statistically significant relationship between the levels of vulnerability to behavior stressors and placement status. The null hypothesis was rejected.

This study found that there was a significant association between the levels of vulnerability to behavioral stressors and placement status at the .01 alpha level. The on-placement students scored at lower levels of vulnerability to behavioral stressors than the pending placement students.

As found in the review of the literature, there are so many general causes of behavior stress that almost anything that occurs in one's life can cause stress to a certain degree. What constitutes a stressor and one's reaction to it often differ from individual to individual. This difference is partly the result of individuals having varying emotional and social resources to cope with stress.

Theoretical Implications

The literature review illustrated there are a variety of theories of stress. There clearly is an abundance of evidence to support the notion that stress in modern society is a most serious threat to the well being of human beings if not controlled, and of course the most important factor in such control is the human being, him or herself.

Behavior reactions are, for the most part, physically oriented; they are likely to involve more overt manifestations that are provoked by the physiological reactions. An individual under stress will function with a behavior that is different from ordinary

behavior.

Limitations

Based on the results of this study the following limitations and recommendations are for those who are considering ways to possibly improve placement by determining the stress levels of students being interviewed for Co-op position.

1. Even though on-placement students showed lower levels of stress in the area of behavior, this study did not look at the possible effects of such variables as gender, grade point average (GPA) and income level on employment status. It is recommended that future studies be undertaken at a random sample of similar (commuter, non-traditional student population) colleges and universities with cooperative education programs to determine if other factors may have had an effect on employment status.

2. While this study found an association between behavior stressors in the inventory and placement, these findings were based on survey research of students who had already completed their placement interview. It is recommended that future studies administer a series of inventories to help determine the student's stress level throughout their co-op placement. These inventories will help determine the type(s) of workshop(s) the director should necessitate to better accommodate the students needs.

3. This study was limited to looking at only vulnerability levels to stress, thus did not provide a broad picture of the student's emotional status. It is recommended that future studies use the Miller, Smith & Melher Stress Audit, which would give the researcher or director a more detailed outlook of the student.

4. The background, motivation, and maturity of the student were not factored into this research, but it could also confound the results. Future studies should take this into consideration.

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Appendix A

HOW VULNERABLE ARE YOU TO STRESS?

In modern society, most of us can't avoid stress. But we can learn to behave in ways that lessen its effects. Researchers have identified a number of factors that affect one's vulnerability to stress --among them are eating and sleeping habits, caffeine and alcohol intake, and how we express our emotions. The following questionnaire is designed to help you discover your vulnerability quotient and to pinpoint trouble spots. Rate each item from 1 (always) to 5 (never), according to how much of the time the statement is true of you. Be sure to mark each item, even if it seems not to apply to you -- for example, if you don't smoke, check off 1 next to item 6.

	Always	Some-times	Never
1. I eat at least one hot, balanced meal a day.	1	2 3 4	5
2. I get seven to eight hours of sleep at least four nights a week.	1	2 3 4	5
3. I give and receive affection regularly.	1	2 3 4	5
4. I have at least one relative within 50 miles, on whom I can rely.	1	2 3 4	5
5. I exercise to the point of perspiration at least twice a week..	1	2 3 4	5
6. I limit myself to less than half a pack of cigarettes a day.	1	2 3 4	5
7. I take fewer than five alcoholic drinks a week.	1	2 3 4	5
8. I am the appropriate weight for my height.	1	2 3 4	5
9. I have an income adequate to meet basic expenses.	1	2 3 4	5
10. I get strength from my religious beliefs.	1	2 3 4	5
11. I regularly attend club or social activities.	1	2 3 4	5
12. I have a network of friends and acquaintances.	1	2 3 4	5
13. I have one or more friends to confide in about personal matters.	1	2 3 4	5
14. I am in good health (including eye- sight, hearing, teeth).	1	2 3 4	5
15. I am able to speak openly about my feelings when angry or worried.	1	2 3 4	5
16. I have regular conversations with the people I live with about domestic problems -- for example, chores and money.	1	2 3 4	5
17. I do something for fun at least once a week.	1	2 3 4	5
18. I am able to organize my time effectively.	1	2 3 4	5
19. I drink fewer than three cups of coffee (or other caffeine-rich drinks) a day.	1	2 3 4	5
20. I take some quiet time for myself during the day.	1	2 3 4	5

Appendix B

I am a graduate student at Marshall University Graduate College. I will be using the individual information gathered from this survey for my thesis. The information that has been gathered is completely anonymous and will not be shared.

You have the right to: not answer all of the questions, quit at any time or not take the survey. You will not be paid to complete the survey. The information will not go in your file. This survey will be used to determined whether there is a difference between students that have had stress management training and those whom have not had training. If you complete this survey it will be considered consent to use your data.
Thank you for completing this survey.

What is your gender? ____ M or ____ F

1. What is your age? _____

2. What is your race/ethnic group? _____

3. How many children do you have? _____

4. Are you _____ Married _____ Divorced/Separated _____ Single/Never married _____ Widowed

5. What is your household income? _____

6. How many dependants do you support on the above income? _____

7. Does your spouse work outside the home? _____ Yes _____ No

8. How many jobs do you work? _____

9. Do you work _____ full time _____ part time

10. How many hours of volunteer work do you do a month? _____

11. Do you health care coverage? _____ Yes _____ No

12. How many credit hours have you completed? _____

13. How many credit hours do you carry? _____

14. What is your major? _____

ID #_____
Please use a # you can remember such as the last 4 digits of your parents phone #.
If you would like to know how "stressed" you are, please stop by the Co-op office after Nov. 30. You will need to remember your ID#.

Appendix C

January 15, 2000

Dear Dr. Oden:

As a graduate student in the general psychology program at Marshall University Graduate College I am requesting permission to conduct a research project in the Cooperative Education Department at West Virginia State College. The research would require obtaining stress inventory results from Cooperative Education students. The inventories will be administered by the Director of Cooperative Education, and the inventory scores of the students that been offered employment will be compared to those who were not offered employment. These results will be analyzed to determine if there is a significant discrepancy in stress levels between these two groups. No identifying information will be used or released; confidentiality will be maintained. Thank you for your time and consideration.

Sincerely,

Judy L. Rathbun

Judy L. Rathbun

In signing this form, I am stating that I am aware of the nature of the study and I grant permission for the research to be conducted by Judy Rathbun to fulfill the requirements for her thesis project at Marshall University Graduate College.

Barbara J. Oden

Dr. Barbara J. Oden
Vice President, Academic Affairs

Appendix D

Dear Cooperative Education Student,

I am completing my Master's Degree at Marshall this semester. As part of the requirements for graduation I must write a thesis. My thesis is on stress and students.

I am asking students to volunteer to come in and fill out a stress survey. It will take about 3-4 minutes. I will be using the individual information gathered from this survey for my thesis. The information that is gathered will be completely anonymous and will not be shared.

Whether or not you volunteer to complete the survey will not in any way effect your placement with the co-op office. If you have any questions feel free to call me at 766-3203 or stop by the office. I would like to thank you in advance for any consideration you give to helping me with my thesis.

Judy Rathbun

Filbert, Nancy H

From: Hawkins, Charlene R
Sent: Monday, February 19, 2001 3:06 PM
To: Filbert, Nancy H
Subject: Theses - December 2000

Nancy:

My students will bring a box of theses to you tomorrow from the December 2000 graduation list. It will include the following:

Blake, Janice - Psychology
Hagan, Cynthia - Psychology
Hicks, Veria - Psychology
Mainzinger-Rathbun,, Judy L. - Psychology

Charlene